

### **REMARKS/ARGUMENTS**

Reconsideration of this application is respectfully requested.

The Examiner's refusal to consider the Information Disclosure Statement (IDS) filed July 24, 2006, is not understood. 37 CFR § 1.97(c) only requires that an IDS filed prior to a final office action be accompanied by one of the statement specified in 37 CFR § 1.97(e) or the fees set forth at section 1.17(p). As the transmittal sheet submitted July 24 clearly indicates and as the submitted credit card charge authorization clearly also contemplated, the fees paid on July 24, 2006 included the \$180.00 payment for the IDS fee specified at 37 CFR § 1.17(p). Furthermore, applicant's accompanying remarks at page 10 of the amendment submitted on July 24, 2006, explicitly notes that "IDS fee for this stage of prosecution is also attached..."

In short, the submission on July 24, 2006, was fully compliant with 37 CFR § 1.97(c). Furthermore, the present submission is being made concurrently with the filing of an RCE. Thus, there are at least two (2) reasons that the IDS submissions previously made in this case should all now be considered in full and fully initialed copies of relevant Forms PTO-SB/08A should be returned to complete the record of such consideration.

The above amendment corrects the typographical error noted by the Examiner.

The rejection of all pending claims 1-17 under either US Patent Application Publication 2003/0008762 or its counterpart Issued US Patent No.6,692,652 are both respectfully traversed.

The formula defined in applicant's claim 1 is directed to a composition in which piezoelectric characteristics can be obtained (US patent publication 2004/0214723, paragraph [0048] to [0052]). Crystal oriented ceramics with this composition have a high Curie temperature and hence can be used as a piezoelectric material for automobiles.

Applicants claims 8-10 are defined using  $E_{33\text{large}}$  (dielectric constant in a strong electric field),  $D_{33\text{large}}$  (the displacement generated in a direction parallel to the direction in which voltage is applied),  $S_{\text{max}}$  (maximum strain), etc. These claims define the behavior of crystal oriented piezoelectric materials in a case where an electric field strength of 100 V/mm or more is required for the use as an actuator material.

Methods for controlling the displacement generated in a large electric field can be classified into:

- (1) a voltage control method in which the voltage is controlled as a parameter,
- (2) an energy control in which displacement is controlled by using injection energy as a parameter, and
- (3) a charge control method in which displacement is controlled by using an injection charge as a parameter.

The applicant inventors unexpectedly found that the claimed crystal oriented ceramics have superior temperature characteristics (i.e., small temperature dependency of generated displacement) with respect to the above control methods. As shown in Figs. 8 and 9, regarding  $E_{33\text{large}}$  and  $D_{33\text{large}}$ , the crystal oriented ceramics indicate a relatively flat fluctuation over a temperature range of 100°C, while non-oriented ceramics have a peak at a certain temperature (which was found by the inventors to be the phase transition temperature). Further as shown in Figs. 10 and 11, the applicant's crystal oriented ceramics indicate a relatively flat fluctuation over a temperature range of 100°C with respect to the above three control methods.

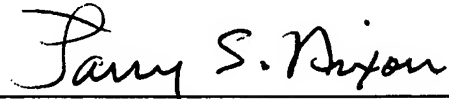
Thus, the claimed crystal oriented ceramics have advantageous characteristics which cannot be expected from any teachings or suggestion of US patent 6,692,652.

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Accordingly, this entire application is now believed to be in allowable condition and a formal Notice to that effect is respectfully solicited.

Respectfully submitted,

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